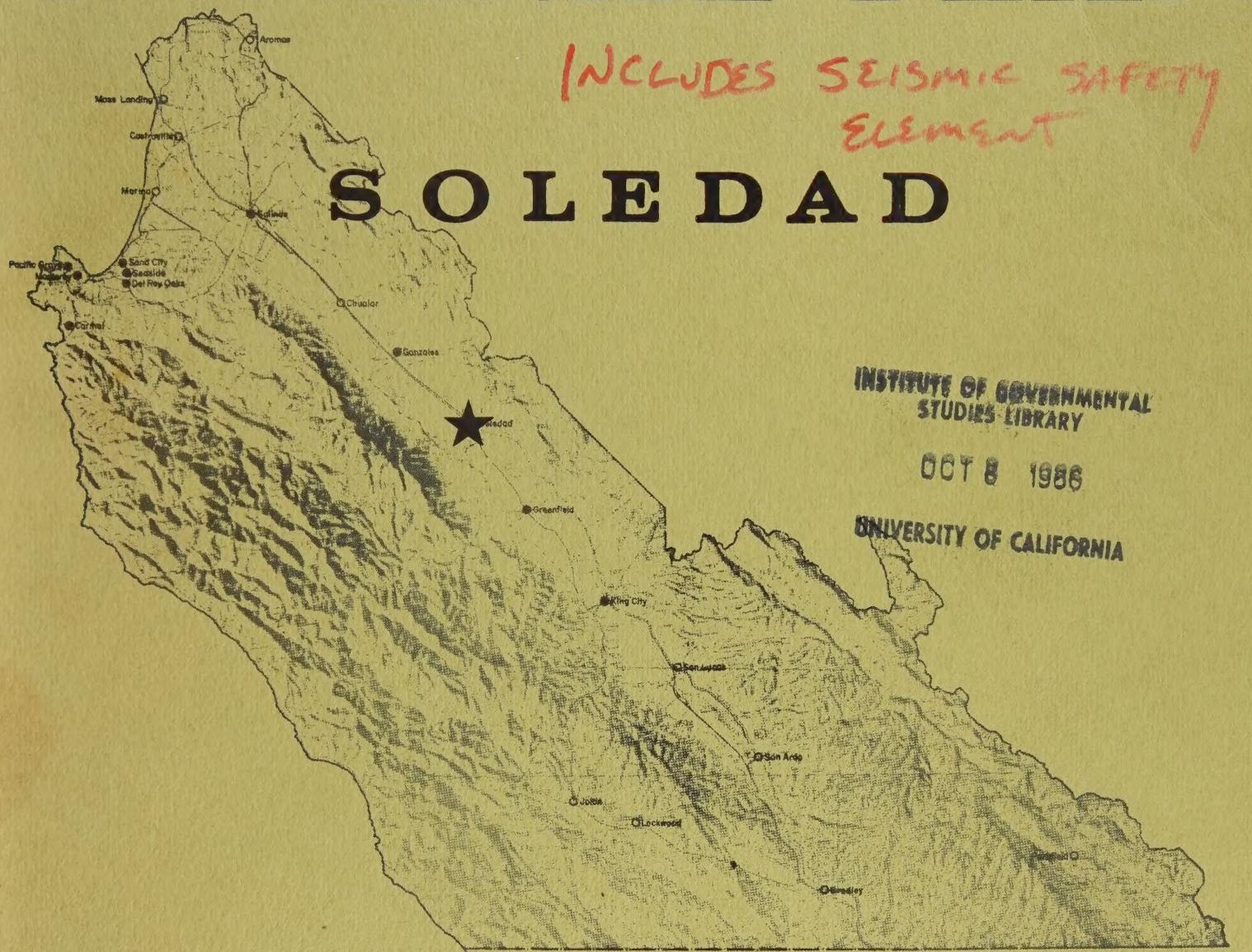


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# THE SAFETY ELEMENT of the GENERAL PLAN



## SOLEDAD

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HAHN, WISE and  
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Planning Consultants  
San Carlos, California



THE SAFETY ELEMENT

OF THE

GENERAL PLAN

SOLEDAD, CALIFORNIA

Adopted

May 13, 1975

HAHN, WISE & ASSOCIATES, INC.  
Planning Consultants



## CITY OF SOLEDAD

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## SOLEDAD

### SAFETY ELEMENT

#### INTRODUCTION

Soledad is in the middle portion of the Salinas Valley. Its immediate neighbor to the north is Gonzales and to the south the City of Greenfield. The City has experienced a more rapid growth than its closest neighbors. It is located in the richest portion of the agricultural district of Monterey County in the Central Salinas Valley. The City of Soledad is a major truck-farming and crop producing center famous nation-wide.

It is equidistant between the two important trade centers, Salinas and King City, it has a significant trade potential of its own.

U. S. 101 Freeway, El Camino Real connecting to U.S. 101 at the north and south end of the Planning Area and the Southern Pacific Railroad are major routes of communication with other areas of the County and the State and also provide major evacuation facilities



## WHAT IS A SAFETY ELEMENT?

The Safety Element of the General Plan is a guide to provide protection in the community and the Planning Area from fires, floods and geologic hazards including features necessary for such protection such as evacuation routes, peak load water supply requirements, minimum road widths, clearance around structures, and indication of geologic hazards by map in areas to the easterly and westerly of Soledad.

The Plan has a close relationship with the Land Use and Circulation Elements of the General Plan. However, the specific purpose of the Safety Element is to identify, map and evaluate the existing and potential hazards, both as to severity and frequency of occurrence. The Plan should also analyze hazardous land use relationships.

"Acceptable risk" must also be determined. In order to make this determination it should be kept in mind that any attempt to develop an appropriate planning response to potential hazard involves a judgement decision, either explicit or implicit, of how much risk is acceptable to the community. The problem of risk is one of public policy and the appropriate allocation of public resources to mitigate hazards. The Safety Element must provide a framework in which the community, as opposed to an individual, responds to the question in a meaningful way.

Once the problem has been recognized, considerable effort will be required to evaluate its likely severity, frequency, and the characteristics of the area involved. Evaluation should also take into account the benefit-cost ratio of reducing hazards, acknowledging



the intangibles involved in comparing it with that of other projects. The factors of voluntary and involuntary exposure to risk must be considered in developing decisions in the Plan.

The Plan must also define the nature and magnitude of effort required to mitigate hazards. Definition of the general nature of regulations and programs needed to prevent or mitigate the effects of hazards in the developed and undeveloped areas by the exchange of information and advise with Police, Fire and Public Works Departments as well as other interested agencies.

As in the Land Use Element and for the people living and making a living in the area, the main task in planning their City is to enhance the natural, as well as the man-created environment, making their City "a nice and safe place to live", even better than in the past.

### Objectives

The General Plan is a schematic representation of the objectives and goals toward which, the people living in an urban area are striving in their effort for a rational organization of space in which they live. The foremost goal is that physical development of the urban area proceede in an orderly manner providing for safety as well as preserving aesthetic values of the region. All other objectives support the primary goals. The objectives of the Safety Element of the General Plan are:

1. To introduce safety considerations in the planning process in order to reduce the loss of life, injuries, damage to property and social and economic dislocation resulting from fire, flood and possible dangerous geologic occurrences.



2. To recognize safety hazards including geologic hazards, flood hazards and hazardous structures and surroundings.
3. To identify goals for reducing or eliminating the hazards indicated above.
4. To specify the acceptable level of risk which is the level of risk below which no specific action by local government has deemed to be necessary.
5. To set forth a program with a view of attaining reduction of safety hazards as related to existing and proposed structures and surrounding habitat.
6. To set priorities for a reasonable time period in which to abate safety hazards, recognizing the variation and frequency and occurrences of such events.
7. To set standards and criteria for land use and circulation relating to fire prevention and control as well as flood and geologic hazards.

#### Principles

The principles and standards set up below represent the basic guidelines within which the Safety Element of the General Plan was formulated. These are continually subject to change as new information is developed and as this information becomes available, the Safety Element should be studied so their effect may be noted and the Plan revised accordingly:

1. It is recognized that the Safety Element contributes to developing land use standards and policies. These will relate type and intensity of use to the level of risk in fire, flood and geologic



hazards. It also contributes to the effect on development based on that risk, and to the availability of services and facilities to combat risk or hazards.

2. The Safety Element also contributes standards and requirements on the Circulation Plan and the Public Facility Elements, and will have important implications on the Open Space and Conservation Elements.

3. To reduce the social costs due to injury, loss of life, or public and private dislocations thereby increasing the sense of community security and well-being.

4. To reduce the costs of direct and indirect property loss and economic dislocation.

5. To provide policy directives for reducing adverse impacts on both man-made and natural environment of major safety hazards.

#### BASIC STUDIES AND INFORMATION

##### The Planning Area

The Planning Area is considered to be that area which in the City's judgement has a direct impact on the City's development. It is not necessarily the only area which is or should be included in the City Limits. The Planning Area should normally encompass the surrounding lands which are economically and physically related to the City. For the study of the Soledad Planning Area boundaries can be described as follows:

- A. The southwesterly boundary is formed by U.S. 101.
- B. Western boundary is limited by a portion of San Vincente Road.



C. From the north to the east the Planning Area is bounded by a new proposed peripheral road entitled "East Valley Scenic Highway".

The total Planning Area represents approximately 1600 acres. It includes about 567 acres of incorporated urban area and approximately 1040 of unincorporated, mostly agricultural lands. While over a thousand acres are outside the City it is essential that the objectives and policies be applied to any future development in these areas. If haphazard development is allowed without consideration of geologic and other hazards the safety of these areas as well as the City could be jeopardized.

#### POPULATION

##### Existing Development and Future Development

The population of Soledad is approximately 4200 persons. The population has been projected to approximately 9300 by the year 1990. To house the projected population approximately 2500 additional dwelling units will be needed.

The Land Use Element indicates approximately 160 acres occupied by permanent residential uses in 1972. This figure has probably increased to approximately 180 to 190 acres. There is a total developed area of approximately 370 to 380 acres within the City Limits. There is a total of approximately 1100 acres within the Planning Area which are in agricultural use. The total additional housing potential within the City Limits represents approximately 1055 dwelling units of which 700 units would occupy vacant land and 355 dwelling units would be in the area of transition



from low to higher density. However, if developed to densities indicated in the Land Use Element this figure could expand to 2260 total dwelling units within the City and 4100 dwelling units within the Planning Area, which is about 800 units higher than the projected 3300 dwelling units needed for 1990. The Land Use Element indicates approximately 890 acres of residential development, approximately 260 acres of commercial and industrial development and 460 to 470 acres of public development, parks, streets and railroad right-of-way in the total Planning Area, for a total acreage for the entire Planning Area of slightly over 1600 acres. It is this factor of expansion as well as existing development toward which the objectives and policies of the Safety Element are pointed, recognizing that the holding capacity within the total Planning Area is between 11000 and 1200 persons.

#### EXISTING PHYSICAL CONDITIONS

##### Soils

Approximately 25% of the good or fair soil as rated by the Soil Conservation Services occurs in the Salinas River Valley. The high quality soil in the Valley results from the run-off from the Santa Lucia and the Gabilan Ranges.

The deep soils of the alluvial valley and particularly those drained by the Salinas, San Benito, Pajaro, Santa Maria, Santa Ines and Cayuma Rivers, varies in texture from light sands to heavy clays. Some localities are at the mercy of high water tables or over-flow from winter rains.

In the Soledad area there are five predominate soils types. They are as follows:



Salinas clay with a depth of 8 to 10 inches is dark brown or grayish-brown and on drying assumes an adobe structure. The subsoil is brown, slightly compact silty clay or clay with a depth of 26 to 40 inches. The sub-soil is stratified with silt loam, loam in some places sandy loam. This soil type is found westerly of the railroad and northerly of the City.

Greenfield coarse sandy loam occurs northeasterly of the City, the surface soil of this coarse sandy loam is dark brown or dull-brown coarse sandy loam, varying in thickness from 10 to 20 inches and containing a large quantity of sharp angular quartz grit or coarse sand and fine gravel. The soil is absorbtive and tententive of moisture and contains a moderate supply of organic matter. The upper part of the sub-soil, to a depth ranging from 45 to 54 inches consists of dark brown or dull reddish-brown slightly or moderately compact, gritty coarse sandy loam. This layer contains the accumulated products of the weathering of the surface soil, though in no place has weathering progressed sufficiently to result in the formation of the tight heavy textured sub-soil and pronounced jointed structure developed in more maturely weathered old valley filling soils. The substratum, to an undetermined depth, consists of dark-brown, dull-brown, or in places dull reddish-brown, coarse sandy loam or loam.

Greenfield coarse sandy loam, gravelly phase, occurs north-erly and easterly of the City. The gravelly phase differs from Greenfield coarse sandy loam in the presence of varying quantities of rounded or sub-angular medium or small gravel scattered throughout the soil.



Gravel is not present in sufficient quantities to prevent cultivation, though it does have a slight influence on agricultural operations. The soil material is derived granitic or quartz bearing schistose rocks. Soil of this kind is intimately associated with typical Greenfield fine sandy loam located in the vicinity of Greenfield on the west side of the Valley. The native vegetation, consists of oaks, brush and various herbaceous annuals and perrenials.

Chular sandy loam is located southerly of the City. This sandy loam has developed the soil profile typical of the moderately mature old Valley filling soils of this region which have developed under normal conditions of weathering. Under virgin conditions the top soil consists of two layers, the surface soil and the eluviated sub-surface layer. The surface soil, to a depth of 3/4 or 1 inch, consists of dark dull grayish-brown sandy loam which contains an appreciable quantity of partly decayed organic material. When undisturbed it has a somewhat platy structure that breaks into single grain structure when moved. In cultivated soils this layer is destroyed, and the material, to a depth of 15 inches or less, is similar to that occurring in the underlying sub-surface soil. This layer under virgin conditions is dark-brown or dull reddish-brown sandy loam of coarse granular structure to a depth ranging from 12 to 15 inches. Below this the sub-soil or layer of clay or colloidal accumulation. This apparently does not change under cultivation but consists of an upper layer which under virgin conditions, is slightly compact, dark reddish-brown, gritty sandy loam or fine sandy loam of higher clay content which tends slightly



toward a columnar structure until broken down, when it is cloddy. The lower part of the sub-soil which occurs at a depth ranging from 24 to 32 inches consists of a dark reddish-brown, very compact material similar in texture to the overlying layer. It is of pronounced columnar structure when dry and is plastic and sticky when wet. The columns have from 5 to 8 faces and sharp angles. The faces when moist present a glossy waxy appearance, owing largely to the concentration of clay and colloids leached from the zone of eluviation and deposit over the surface.

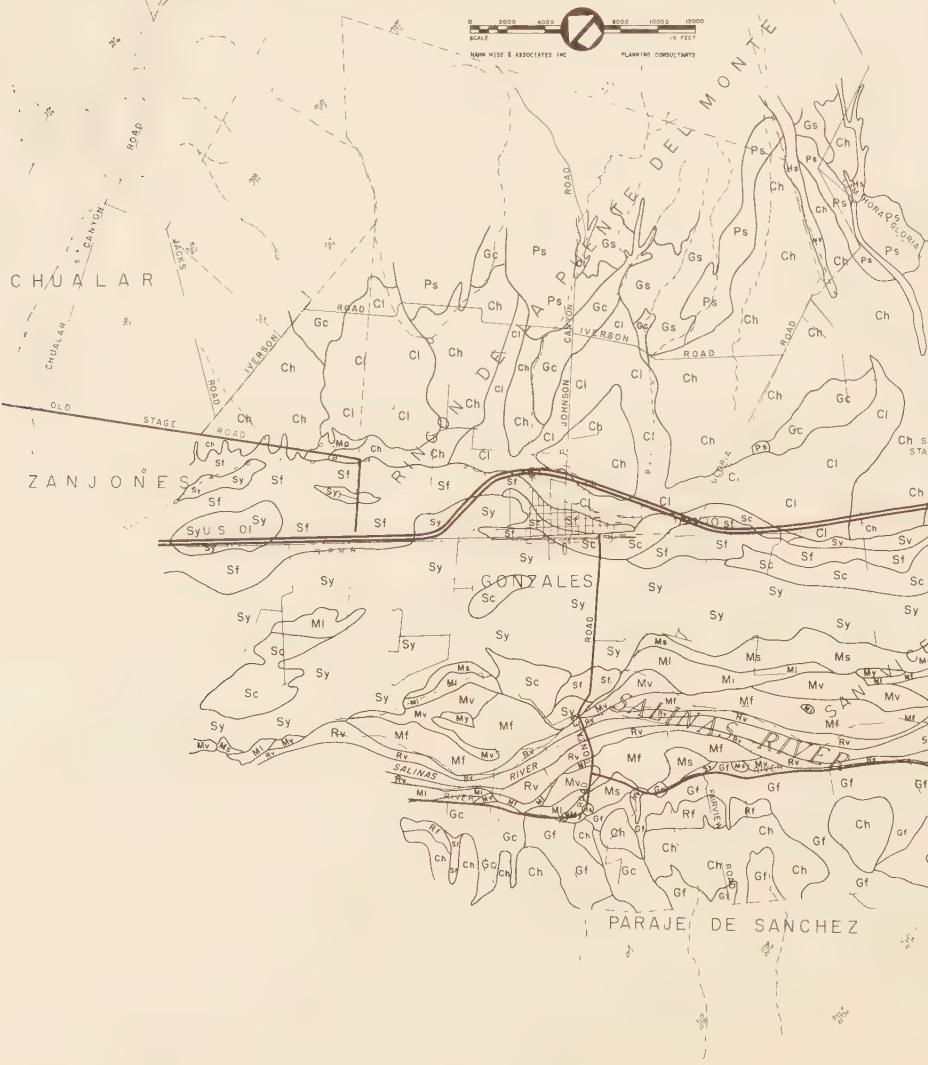
Other types of soils which occur primarily in the mountain area are the rough mountain land and the Holland sandy loam which is also east of the City. Westerly of the City along the Salinas River particularly is river-washed sand.

All of the soils in the Soledad Area are in Class I, II and III and are rated generally as soils having few limitations or hazards and they may be used for cultivation, pasture, range land, woodland, wildlife or urban uses. Class III soil has a few more limitations than the Class I or II but it is suited for cultivation, pasture, rangeland, woodland, wildlife or urban uses.

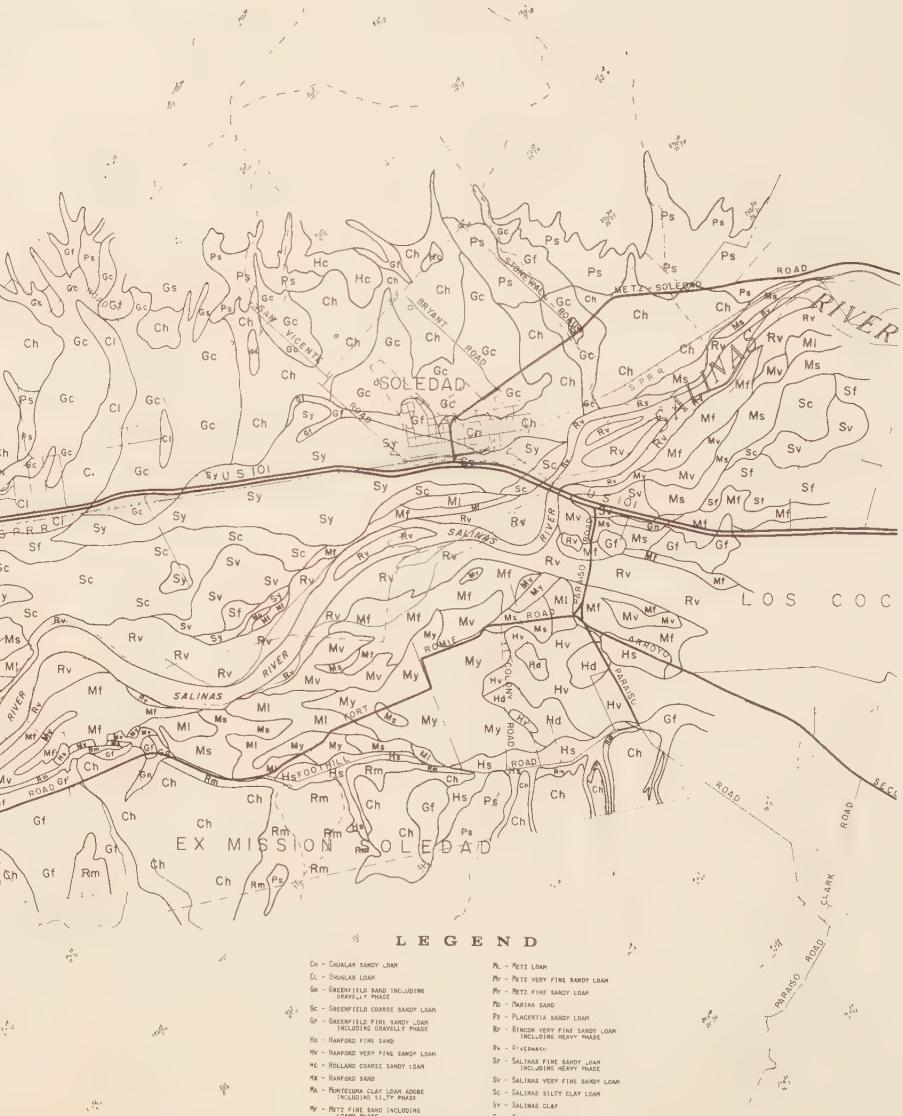
Class IV soils are approximately a mile and a half or two miles northeasterly of Soledad along with Class VII and VIII in the mountainous areas and the areas westerly of the Salinas River in the steeper terrain. The Class IV soils have greater limitations than Class I to III; however, with conservation measures they can be cultivated and they are suited for pasture, woodland, wildlife and controlled urban uses.



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# GENERAL SOIL MAP



## LEGEND

Ch - CHUALAR SANDY LOAM	Mf - PETZ LOAM
Cl - CHUALAR LOAM	Pv - PETZ VERY FINE SANDY LOAM
Gc - GREENFIELD SAND INCLUDING GREENFIELD COARSE LOAM	Pv - PETZ FINE SANDY LOAM
Gf - GREENFIELD FINE SANDY LOAM	Pd - MARINA SAND
Hd - HARTFORD FINE SAND	Ps - PLACENTIA SANDY LOAM
Hv - HARTFORD VERY FINE SANDY LOAM	Rf - RIVERTON VERY FINE SANDY LOAM INCLUDING HEAVY PHASE
Hm - HARTFORD COARSE SANDY LOAM	Rv - RIVERTON FINE SANDY LOAM
Hn - HARTFORD CLAY LOAM	Sf - SALINAS FINE SANDY LOAM INCLUDING HEAVY PHASE
Ht - HARTFORD SILTY CLAY LOAM	Sv - SALINAS VERY FINE SANDY LOAM
Ht - HARTFORD CLAY LOAM ADDEB INCLUDING SILTY PHASE	Sc - SALINAS SILTY CLAY LOAM
Ht - HARTFORD CLAY LOAM INCLUDING HEAVY PHASE	Sy - SANTA LUCIA CLAY LOAM INCLUDING HEAVY PHASE
Ps - PETZ SILTY CLAY LOAM	



### Water Hazards

There are no flood hazard problems caused by inundations of the Salinas River or other streams, but there is a problem of flooding caused by heavy storms such as occurred in the spring of 1973. Metz Road intercepted a major storm water flow going from the northeast hillside area and poured into adjacent streets of the City. The major portion of that storm flow was intercepted by Third Street which directed it to Monterey Street and on-route seriously affected adjacent residential areas. The remaining portion of the major storm flow continued on its way along Metz Road and diverted a large quantity into adjacent street networks in the direction of the downtown area.

Since there are no adequate interceptor storm water sewer systems installed within the City Limits, all of this surface flow of water has to be absorbed by unpaved portions of the City and partially evaporate after the cessation of the rains.

It is proposed to intercept the main storm water flow on Metz Road before it reaches the Soledad City Limits. The construction of an interceptor catch basin on Metz Road and a storm drainage canal to the Salinas River Bed would eliminate the major cause of flood hazard within the Planning Area. This project has been approved by the County Flood Control Office and is designed to cope with the flood hazard problems of the City of Soledad.

It should be noted that the main damage caused by heavy storms in the past were due, not to accumulation of waters within the City Area alone, but the disastrous effect happened when the

A P P E N D I X

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# FLOOD HAZARDS

STORM WATERS  
DAM FAILURES\*



TRAVEL TIMES OF FLOOD PEAK  
(Time in Hours)\*

LOCATION	DAMS	
	SAN ANTONIO	NACIMIENTO
Soledad	10 1/2	11 1/2
Gonzales	14	15

\* Time measured from beginning of Dam Failure (Spill)

LEGEND

- [Shaded Box] Possible Major Flood Prone Areas
- [Dashed Line] Potential Flood Line Due to Dam Failure

\* Source : Office Emergency Services  
State of California



flood water generated outside the City Area and flow intercepted by Metz Road was integrated with the storm waters originating with the City Area itself.

With the construction of two major catch basins, as indicated (on Metz Road and Monterey Street) and two storm water sewer lines connecting to the Salinas River, the flood problem should be solved in an efficient manner.

#### The Nacimiento Reservoir & San Antonio Dam

The failure of either the Nacimiento Reservoir 40 miles southwesterly in San Luis Obispo County or the San Antonio Reservoir 30 miles southwesterly of the Planning Area is deemed to be a low risk hazard. However, if failure did occur, either through seismic activity or war emergency the City of Soledad would be affected to only a small degree under most conditions other than something approaching a 100-year storm coinciding with the failure due to seismic activity or national emergency because of the distance from the reservoirs and the opportunity for most of the larger volume of water to disapeate over the intervening lands. Travel time of peak flood is estimated to be 10½ hours from San Antonio Dam and 11½ hours from Nacimiento Reservoir <sup>(1)</sup>.

#### Topography

The topography map of the Salinas Valley from Gonzales to King City, is shown following this section. It indicates two distinct and separate land forms, the mountains with the accompanying canyons and the Valley itself.

The Santa Lucia Range parallels the western border of the Valley. These mountains rise gradually from the floor of the Valley. The eastern slopes facing the Valley, particularly the foothills, contain chaparal and oaks as well as some dry grass in the summer

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(1) Office of Emergency Services  
State of California



and fall seasons.

The Gabilan and Diablo Ranges are on the eastern border of the Valley and separate Salinas Valley from the interior valleys. They are rather bare rolling hills, green in winter and brown the balance of the year.

Immediately bordering the Valley are the grass-covered hills ranging from 200 to 400 feet in height. Further away, east and west of the foothills, are the steeper slopes and these are of major significance in terms of vegetation and in terms of soil erosion and certainly in terms of water run-off toward the Salinas Valley.

#### Natural Vegetation

The natural vegetation in the Planning Area of the four Cities is influenced by climate and location of topographic features. The map following this section divides the Planning Area into five (5) general classifications.

Grass is the prevailing ground cover in the lowlands of the area and in the dry season can be a hazard. Scattered oaks and brush gives some portions the appearance of a park. Chaparal is found on the hills and the lower slopes of the mountains. The major areas of grass lands are to be found in the southeastern portion of the area. The U. S. Soil Conservation Service vegetation classifications were used for the presentation showing the following.

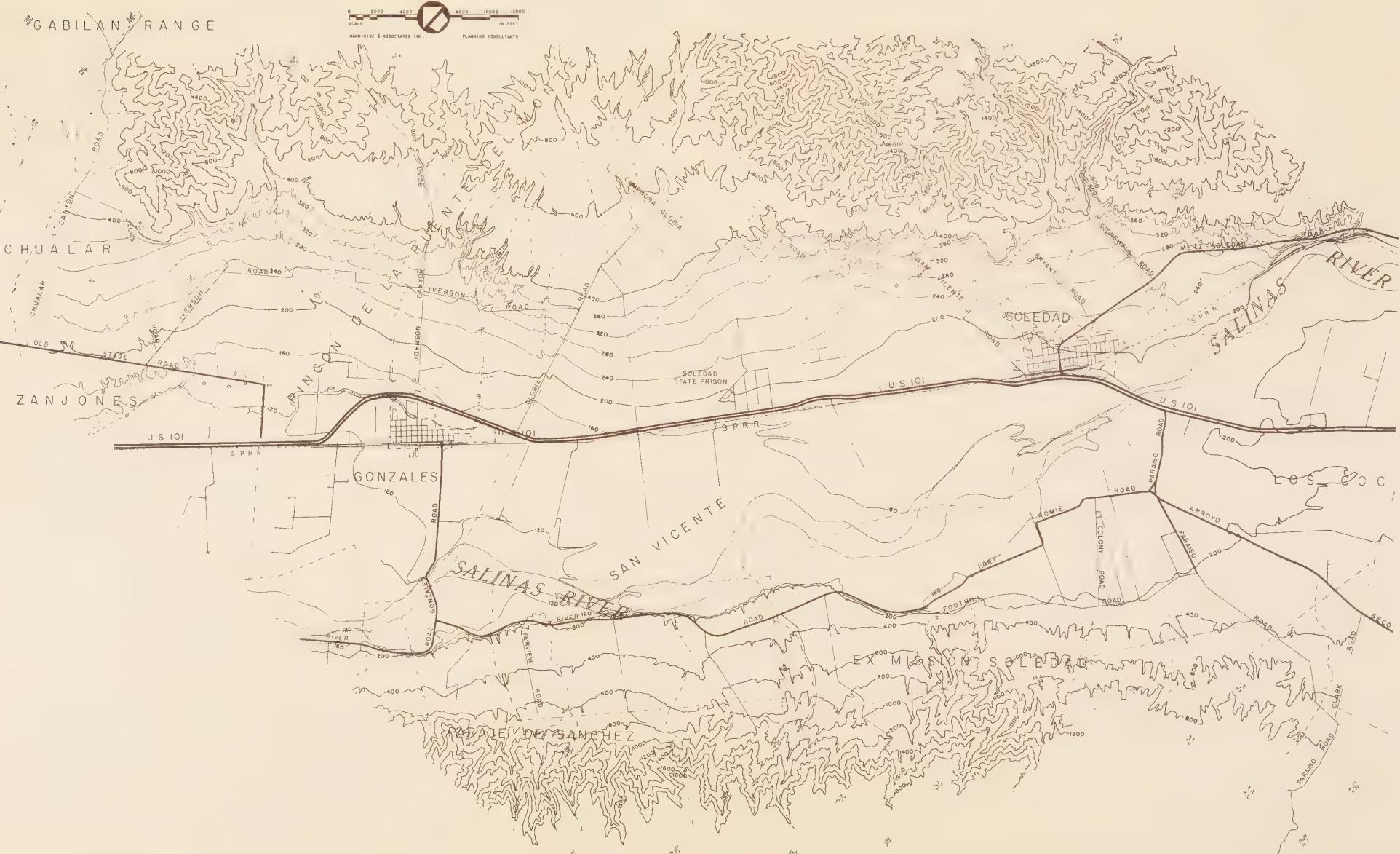
#### Fire Hazards

In the summer and fall there are certain areas which can be fire hazards to the City and surrounding areas. The grass easterly of the City Limits and westerly of the railroad tracks along with



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CALIFORNIA

CONTOUR MAP





the grass and brush in the Salinas River Basin constitute the greatest potential hazard. The grass lands in the foothills are primarily separated from the City and immediate surroundings by a wide band of crop lands. Any structural hazards in the City are primarily of a low fire hazard category with a possible exception of the unoccupied commercial buildings in the southerly part of the City.

#### Seismic Hazards

The primary earthquake fault with the greatest potential of activity, is the San Andreas Fault which lies some 15 miles south-easterly of the City of Soledad. Other faults include the northerly end of the Reliz Fault which is some 4 miles southwesterly of the City, the Miner's Gulch Fault which has been located approximately 4 miles easterly and the Pinnacles Fault 6 miles northeasterly of the City. The Chalone Creek Fault lies approximately 10 miles northeasterly of the City, other faults are located in Hunter Liggett Reservation and the Los Padres National Forest which are west-erly of the City. With the exception of the San Andreas Fault no activity has been detected in the other faults named above within the last 200 years.

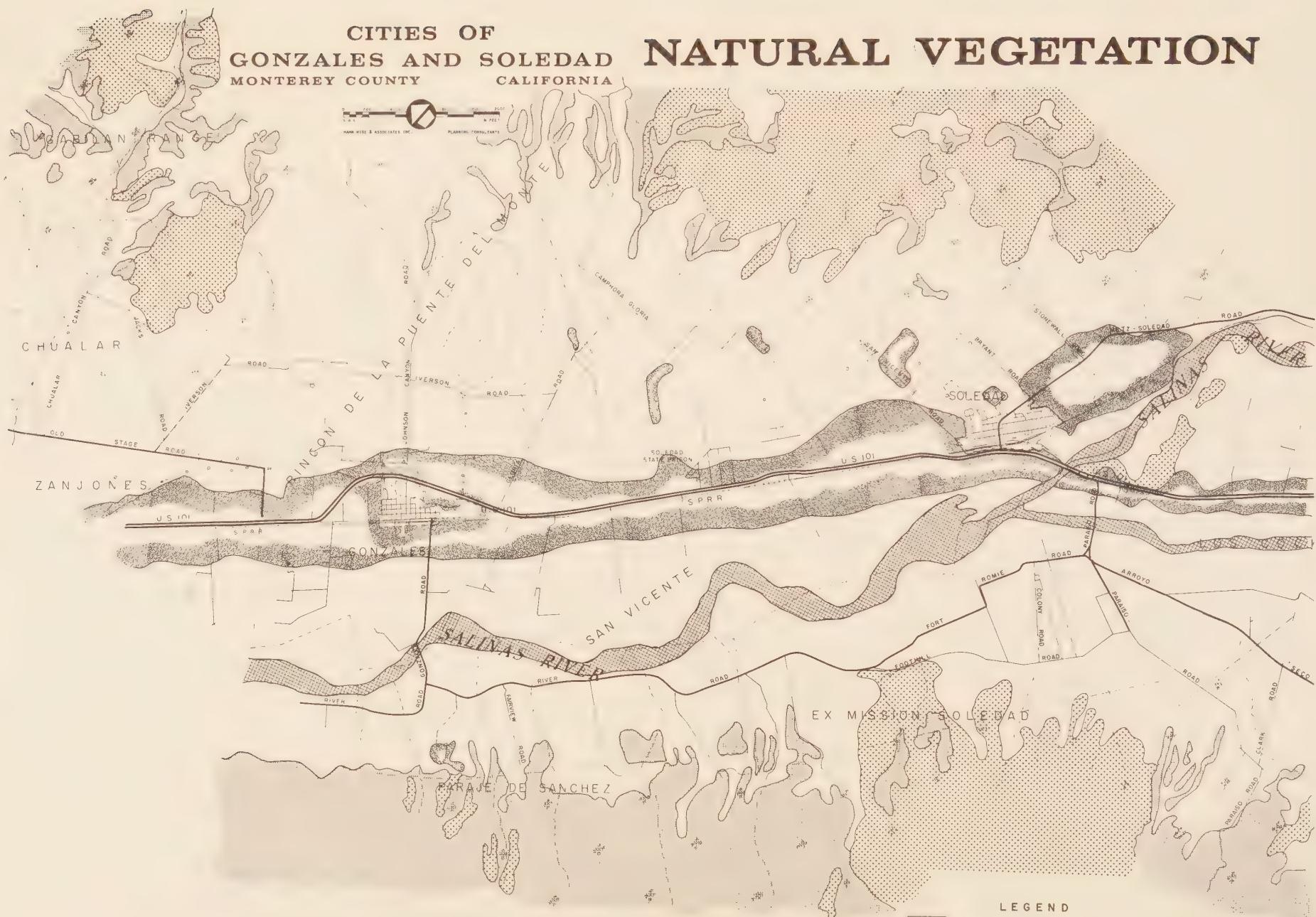
There are, of course, innumerable faults and displacements paralleling the San Andreas Fault which was active in 1961. There are literally hundreds of faults within the Hunter Liggett Reservation. However, the majority of these lie 15 to 18 miles southwest-erly of the City.

The risk analysis of these faults is indicated in the summary of the Seismic Safety Element in the appendix taken from the



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# NATURAL VEGETATION



LEGEND

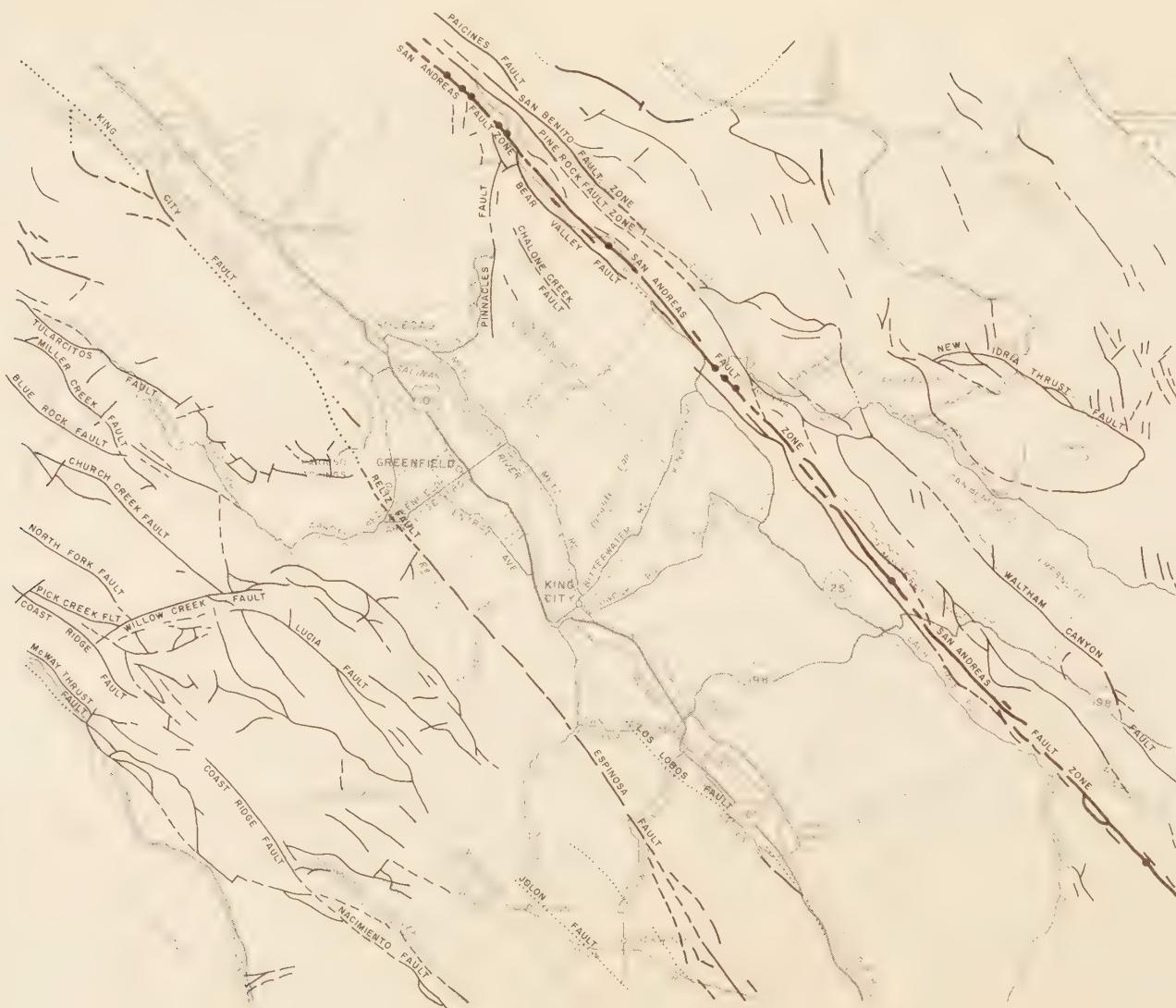
	GRASS, BRUSH & DECIDUOUS TREES
	AGRICULTURAL CROP LAND
	ANNUAL GRASS, SPARSELY SCATTERED BRUSH & LOW TREES
	SCRUB AREA
	EVERGREEN WOODLAND



CENTRAL SALINAS VALLEY AREA  
Monterey County, California



## Geologic Hazards



### LEGEND

- FAULT LINES
- - - FAULT LOCATION IS APPROXIMATE OR INFERRED
- ..... FAULT IS CONCEALED BY YOUNGER ROCKS  
OR BY LAKES OR BAYS
- FAULT CLASSIFICATION  
(INDICATING RECENCY OF MOVEMENT)
- FAULT HAVING MOVED DURING HISTORIC TIMES  
(APPROXIMATELY 200 YEARS)
- QUATERNARY FAULT DISPLACEMENT (DURING PAST 2 MILLION YEARS)  
WITHOUT HISTORIC (APPROXIMATELY 200 YEARS) RECORD
- LOCATIONS OF FAULT CREEP SLIPAGE - SLOW GROUND DISPLACEMENT  
USUALLY WITHOUT ACCOMPANYING EARTHQUAKE



Seismic Safety Element prepared by the Consulting Engineering Geologist for Monterey County.

#### Acceptable Risk

In the context of the Safety Element, the problem of risk is one of public policy and the appropriate allocation of resources to mitigate hazards. The question to be resolved locally is "how safe is safe enough?" The community's responsibility is to provide a framework in which meaningful county-wide response to the question of safety can be meaningful. It is essential to recognize the presence of hazards. Once the problem or hazard has been recognized it is the duty of the community to evaluate its likely severity, frequency and characteristics of the area involved. This effort must take into account the benefit-cost ratio of reducing hazards, acknowledging the intangibles involved and analyzing the factors of voluntary and involuntary exposure to risk before reaching a decision.

Basically what acceptable risk involves is defining the magnitude and nature of efforts required to mitigate hazards. The community must also define the general nature of regulations and programs needed to prevent or mitigate the effects of hazards in the community. Further there must be coordination and exchange of information and advice between the Fire, Police and Public Works Departments of the City as well as other State, Federal agencies and volunteer organizations.

The definitions of the terms used are as follows:



Acceptable risk: The level of risk below which no specific action by local government is deemed to be necessary.

Unacceptable risk: The level of risk above which specific action by the community is deemed to protect life and property.

Avoidable risk: Risk not necessary to take because individual or public goals can be achieved at the same or less total cost by other means without taking the risk.

City officials of Soledad have evaluated the peak load of water supply available to community, the possibility of low pressure areas to any location of the community, the location of places of public assembly for individuals and families in case of emergency and evacuation routes in the City and in all geographical directions out of the City.

#### Evaluation of Hazards

The primary hazard is the possibility of earth movement occurring throughout the area due to the action of the San Andreas Fault. The effect of possible seismic action from other faults located 5 to 10 miles from the community can at this time be evaluated as a low risk. Other possible hazards are the grass easterly of the City Limits and along parts of the Southern Pacific right-of-way westerly of the City Limits. The Salinas River Bed approximately 3/4 mile westerly of the City is itself in the late summer a hazard because of the dry grass and brush which is abundant within the River Bed. There are a few structural hazards within the community and the fire services are acutely aware of these hazards as well as the hazard of dry grass and they are alert to the risk involved. The City has and enforces a weed control ordinance.



Standards and General Criteria for Land Use and Circulation  
to All Risks

As stated above, the primary risks are fire, flood and possible seismic activity and, of course, the possibility of a national emergency. The City Planning Program, includes Land Use Plans and Circulation Plans along with many other elements of the General Plan; coordination between the City Fire Department, Division of Forestry and Greenfield and Gonzales through mutual aid agreements and coordination between the Fire Department, Police Department, Sheriff, Highway Patrol and Department of Public Works through Civilian Defense regulations of the City of Soledad and of course voluntary organizations which play a major role in the event of emergency.

Land Use and Circulation Plans for the City have provided for a minimum of 10 feet between dwelling units and for an adequate circulation system both in right-of-way and access. The circulation system also provides for adequate separation of residential uses, commercial uses and industrial uses throughout the community. The major streets in the community are designated as evacuation routes within the City and through outlying areas on major County roads.

Places of assembly in cases of emergency have been set out in a half dozen places throughout the community. The peak load water supply is some 1,050,000 gallons per day and as stated previously there are very few low pressure areas in any portion of the community and existing hydrants for fire fighting are deemed to be adequate throughout the community.



In summary, the Fire Department is alert to all hazards in and adjoining the community, the Public Works personnel are aware of the possible flood areas easterly of the City and the City is taking steps through a Capital Improvement Program to improve the water system where water lines are deemed to be too small for adequate pressure. The City is also aware of the possible geologic hazards due to seismic activity of the San Andreas Fault and the very low potential of other faults within 4 to 15 miles of the community. They have taken steps in case of all types of hazards as well as National emergencies to provide for places of public assembly for people in the community in case of such emergency as well as providing evacuation routes within the City and into the unincorporated area. The City of course has also adopted an Emergency Plan with appropriate annexes which provide emergency program in the event of National or local emergency.



## IMPLEMENTATION

### General Plan Evaluation

The Land Use, Circulation, Open Space and Conservation Plans have recently been evaluated in relation to the public services in the community and geologic hazards. They will be continually re-evaluated on the basis of Seismic Element, Fire Prevention Control Programs, including separation of residential structures and on-going weed control throughout the community. The Circulation Plan will be re-evaluated on the basis of providing adequate roadways for all land uses both in the City and in the surrounding areas.

### Capital Improvements

Capital improvements shall consist largely of increasing water line sizes in certain streets where they are deemed too small at the present time. They are also building a public swimming pool off Metz Road next to San Vincentes School which may be used as an emergency water supply as well as providing for recreation uses.

### Fire and Building Safety Programs

The Fire Department and the Building Department should initiate a program of continual fire inspection and building safety inspection throughout the City. This particularly applies to commercial and industrial buildings as well as to continue the weed control program and other programs for better housekeeping in and around some of the structures and projects throughout the City.

### Contingency Programs for Major Disasters

The City has updated its Emergency Plan which is the official emergency plan for the City. The plans have been drafted to



encompass the respective functions of all agencies of the City, volunteer agencies, mutual aid agreements and coordination with the County, State and Federal government.

Contingency programs include plans for places of assembly in case of emergency or major disaster. They are noted on the map entitled "Evacuation Routes and Emergency Points of Assembly". They include the Main Street School, American Legion Hall, Scout Hall, Senior Citizens Building, and the Catholic and Methodist Churches.

Evacuation routes have been set out on the above map and they include the major streets of the residential and commercial areas and the major County roads leading to open areas clear of the City. These routes can also be seen on the map entitled "Evacuation Routes and Emergency Assembly Points".

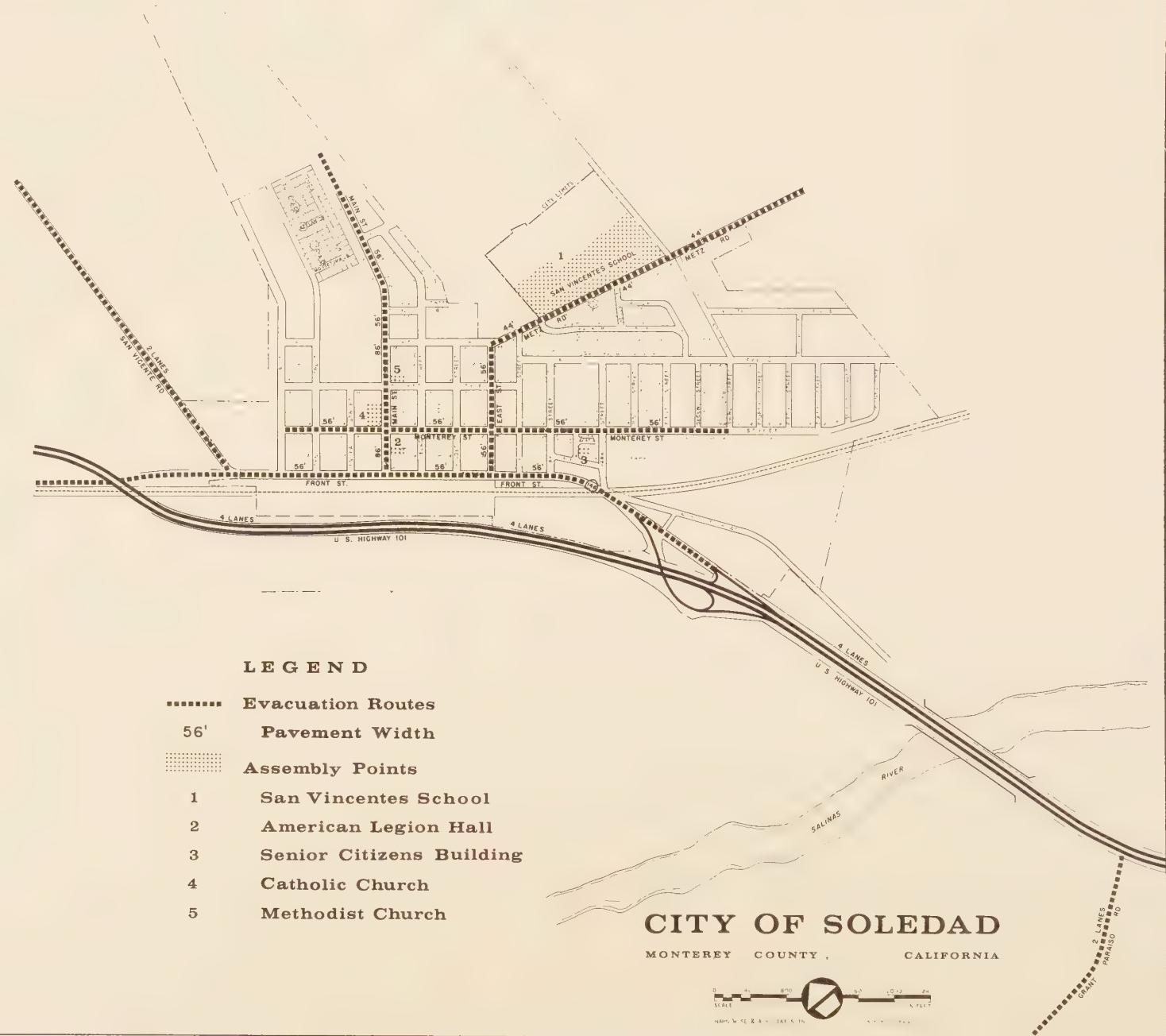
The summary of the Emergency Plan for Soledad is included in the Appendix.

#### Future Programs

On-going review of public and private development proposals should be made by the Police and Fire Departments as well as other departments of the City which now routinely check and approve proposals of public and private development in the community. There should be close coordination and cooperation between all officials of the community including the Police, Fire, Building Department and Department of Public Works in order to eliminate any development which may because of structural deficiencies, location or design constitute a hazard.



# EVACUATION ROUTES AND EMERGENCY ASSEMBLY POINTS





## SUMMARY OF CIVIL DEFENSE AND DISASTER PLAN - CITY OF SOLEDAD

An ordinance relating to Civil Defense and disaster was adopted by Ordinance 133 as a part of Chapter VI, CIVIL DEFENSE AND DISASTER. The City of Soledad adopted the California Master Mutual Aid Plan in 1970.

The purpose of the Civil Defense and Disaster Plan and its associated annexes and standard operating procedures constitute the basic operations plan for the City of Soledad.

The Plan and associated indexes become operative automatically in the following instances:

- a. Automatically in the event of state of war emergency.
- b. Upon declaration by the Director that a local emergency has been previously proclaimed in accordance with the terms of the Civil Defense and Disaster Ordinance of the City.
- c. When the Governor has declared a state of emergency in an area including the City.

The Director of Civil Defense is authorized to order mobilization of the City Emergency Organizations to the extent required in accordance with the provisions of the operation plan. The provisions of the operations plan are designed primarily for application in the event of a war-caused state of emergency. However, such provisions may be used as appropriate and applicable in the event of major "local emergencies".

The planning factors of the emergency plan include:

- a. The Civil Defense system.
- b. Standardization of the operations plans so that the City



and County operate in concert in a major emergency.

c. Emergency requirements setting forth foreseeable tasks, organizational resource requirements and procedures.

d. Private resources are indicated which will be used during war emergencies or local emergencies.

e. Continuous planning includes planning for emergency operations as a continuous process.

f. City-County coordination wherein the City operates directly through the Office of Civil Defense and channels request communications through the Monterey County Operational Area Coordinator to the Civil Defense Regional Office.

g. Mutual aid wherein the City of Soledad is signatory to the Master Mutual Aid agreement.

h. Continuity of government wherein it is stated that it is essential that the City's organization be retained despite any emergency.

#### Objective and Assumptions

This includes operational objectives, planning assumptions, situation assumptions, operational assumptions, continuity of constitutional government.

#### Specific Objectives

a. Minimize the loss of life and property resulting from an attack on the United States.

b. Provide for the efficient use and equitable distribution of remaining resources in caring for survivors of an attack.

c. Provide for recovery from attack.



### Planning Objectives

- a. Mutual understanding of the authority, responsibility, functions and operations of government at all levels during major emergencies.
- b. The integration of non-governmental disaster agencies, key industries and professional groups whose resources are necessary to meet emergency requirements.
- c. The basis for a City-wide Civil Defense and Disaster organization.
- d. Coordinated planning and disaster preparedness.
- e. Coordination of effort and management of resources during major emergencies.

### Operational Concepts

This includes readiness conditions such as transition from normal peace time operations to war emergency readiness; the transition in a uniform manner at each level of State and local emergency organizations and response automatically and fully without issuance of detailed instructions.

Warning conditions are also included, such as strategic warning, tactical warning and attack (no warning). General procedures for dissemination and termination of warning are included.

Operational time periods are set out indicating times for shelter occupancy, emergence from shelter and final recovery.

The plan also includes counter measures from radiological activity including effective use of shelter, remedial movement of people to safer areas, exposure control and decontamination.



Basic operation policies are set forth including methods of operation, communications from the next higher level, available warning time to provide maximum use of existing fallout shelters and implementation of control measures from contaminating substances, pre-attack warning, post-attack warning, attack effect, the collection of information and evaluation of the situation, assistance of all emergency organizations, determination of hazards and assignment of agencies and organizations in conducting emergency operations.

#### General Plan

The General Plan includes situation response, primary operation, priority operation, coordination of effort and warning conditions scheduled. Additional parts of the General Plan include post-attack responses from fallout and post-attack responses from fires which have been created by a nuclear weapon attack. The final recovery schedule is set forth with emphasis placed on management of new resources to meet continuing survival and recovery needs on a Regional, State or National basis. Operational considerations include preparing for the potential or major calamity, particularly in relation to urbanization of previously unpopulated areas and with that of industrial processes which utilize hazardous materials. Other considerations are the impact of earthquake, fire and flood and indiscriminate use of high risk land. Other impacts are the results of hazardous industries, the use of hazardous chemicals in industry and agriculture and transportation accidents which can produce mass casualties and social unrest.

Warning systems are considered in the event of peace time



emergencies and plans are suggested for both the type wherein advance warnings can be given or other emergencies which occur without advance warning.

#### Natural Disaster Responses

Regular volunteer agencies or government agencies are expected to respond in the event the emergency organization is not activated. The priorities are set out such as providing care and treatment for casualties, search and rescue, delivering minimum survival supplies, providing care and treatment for displaced persons, registering persons from affected areas, receiving and answering inquiries on status of persons from affected areas and other responses including mutual aid assistance and establishing and implementing joint procedures for operations.

The plan set out that the City will respond to basic emergency situations such as flood, earthquakes, fire, accidents, civil disturbance, pollution and epidemics.

#### Organization

The plan consists of a detailed outline of the organizational structure, inter-agency relationships, mobilization of manpower and board and committees. The boards and committees which are a part of the City emergency organization consist of the City Council, Disaster Council and special emergency committees appointed by the Mayor. Staff functions are also set out in the Civil Defense Plan. The staff sections referred to appropriate staff annexes of the operations plan for additional information they include the functions of the composition for mobilization and the staff officer



involved. City operating services are set out in the plan and they refer to the appropriate service annexes for additional information. The table sets out the operating services which indicates such services as engineering, utilities, fire, rescue, law enforcement, transportation, supply, welfare, medical and health, food supply, petroleum supply and other functions. There are several annexes adopted by the City Council subsequent to adoption of the original Civil Defense Plan. As stated above, the annexes include all of the staff annexes including operations control, alert and warning, emergency intelligence, radiological events, communications, emergency public information, and EOC administration. The operating annexes include the areas discussed in the previous paragraph. The main operating service annexes include the following:

Law Enforcement - includes situation, mission, organization, functions of the general plan of operational concepts and the general functions of the Police Department under either war emergency or national disaster. These functions of course include law enforcement and protection of people and property, supply and transportation, communications and control centers and control and authority.

Fire Service - includes the same functions indicating the situation and assumptions and missions of the fire service to be in rescue operation and protection of property from contamination or fire. It also sets up the general plan in operational concept, the tasks of the fire service, the supply and transportation responsibilities, communications and control centers.

Engineering Service - includes the setting out of the situation, the mission, the organization, the general plan in operational



concept including operational policies and responsibilities of the Engineering Department. The specific tasks outlined in the annex, such as using their resources to repair and rebuild facilities, to protect water facilities and to control flooding, provide mutual aid to jurisdictions whose engineering resources are insufficient and to repair roads and highways and construct temporary access routes and to provide engineering support for mass care and medical facilities. The specific responsibilities are recording, expenditure accounting, heavy rescue, debris clearance, repair and rebuilding water management and emergency flood prevention and control.

Other operating service annexes such as utilities, rescue, transportation, welfare, medical and health, food supply and others also include the duties and responsibilities of each of the operating services.

#### Task Assignments

Task assignments are assignments of responsibility and are set out along with specific assignments of responsibilities of boards and committees and the basis for their task assignments. Operational factors include standing operation procedures, basic and auxiliary tasks, incidental tasks and the preparation of all public, private and parochial schools for evacuation plans and care of their students during any type of emergency.

American Red Cross has been designated the responsibility of organizing disaster preparedness and relief committees that formulate the preparedness plans and put them into operation when any type of disaster occurs. The Director and various staff sec-



tions are assigned the responsibility for performing basic tasks which include operations control, communications, fiscal responsibilities, situation intelligence, advice on legal matters and technical supervision of the radiological defense, emergency information and shelter management along with the City operating services as set forth in the operating service annexes.

#### Readiness Conditions

Readiness conditions include actions such as the responsibilities of the Director and staff under the Readiness Condition THREE, when the readiness status is assumed at all levels of government. Readiness Condition TWO, when precautionary measures are made in preparation of war and further when it appears that there is a risk of war. Readiness Condition ONE, when a state of emergency is declared by the Governor. Under all conditions the plan outlines the responsibility of the Director and staff in complying with the readiness conditions.

The warning operations and warning facilities are set forth in the plan indicating types of warning, warning signals for war emergency or peace time emergencies, emergency broadcast systems available and instructions for operation. Under communications the primary responsibility under emergency operating conditions is that the Soledad Police Department is to support the field operations of the various emergency systems and that other communications systems provide a link to nearby jurisdictions or higher levels of government. The City licensed radio systems are to be augmented by radio systems licensed to other agencies of the government, to private



industries and to individuals. All such facilities in a state of war emergency will be subject to government control. Finally, the plan indicates the personnel assignment of the various departments including the Soledad Police Department, naming the Mayor as Director, the Mayor-pr-tem as Deputy Director, the City Manager as Coordinator and the City Attorney responsible for legal affairs. Other staff sections assigned are Intelligence, Warning Systems, Communications and Emergency Information and Physical Advisor.

The functions of each one of the operating services are set out in the Emergency Plan for the City of Soledad.



APPENDIX

SUMMARY  
OF THE  
SEISMIC SAFETY ELEMENT

Summary of Seismic-Safety  
by  
Burkland & Associates



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## SUMMARY

### SEISMIC SAFETY ELEMENT

#### PART I - SCOPE OF ELEMENT

The Seismic Safety Element presented herein is responsive to geotechnical interpretation of information available from public sources at the time of preparation of the report on July, 1974 and should be considered as an initial approach to the complex problems involved. It includes an identification and general evaluation of seismic conditions in Monterey County, recommended seismic safety policies, and measures needed to respond to the identified seismic hazards. Critical facilities and occupancies are listed and degree of hazard exposure is identified for each facility together with an indication of level of acceptable risk.

While this Element has significant implications for Land Use Policy, it also provides direction for needed actions in other aspects of local government. It is of major importance that the planning regulations such as zoning, subdivision, grading and building codes provide effective controls and procedures related to seismic safety policies. In addition, recommendations relate to programs for disaster preparedness and recovery, fire protection, and utility systems. Follow-through on each of these subject areas is necessary if the general policy of the Seismic Safety Element is to be adequately implemented at the local level.

#### A. Use of Interpretive Maps

The interpretive maps prepared for the study include two



County-wide maps (MAP 4, LANDSLIDE AND EROSION SUSCEPTIBILITY and photo reduced to 1" = 5 miles;

MAP 5, POTENTIAL SEISMIC HAZARDS) at a scale of 1:125,000 of geotechnical maps and Salinas Valley cities, six maps at 1:12,000.

An explanation of each of the map types, a description of the features shown, and recommendations for use of the maps are presented in the following paragraphs. Wherever possible the larger scale maps of the urban and urbanizing areas should be utilized in assessing geotechnical hazards of particular areas. In the event of difference between these and the County-wide maps, the individual GEOTECHNICAL EVALUATION Maps should be considered as superseding the County maps.

1. County Maps 4 and 5

County Map 4 (at end of report) is an interpretive map showing six general zones of relative susceptibility to landslide and erosion hazards within the County. The boundaries for the zones are drawn in a very general way, based upon a previous history of landsliding, underlying geology, steepness of slopes, and locations of faulted or weakened rock materials. The six zones range from Zone I, having a very low susceptibility to sliding, to Zone VI, having the highest relative susceptibility to sliding. This map is to be utilized in conjunction with County Map 5 (at end of report), POTENTIAL SEISMIC HAZARDS. By using the two maps in combination, all of the seismic hazards discussed in Subsection A, above, are presented in relative terms for the study area. It should be pointed out that within each of the zones, there will be areas of more stable ground in relation to the defined rating and within the more stable ground zones, there will be localized areas of less stable ground.



County Map 5, POTENTIAL SEISMIC HAZARDS, shows in graphic form those areas within the County which are susceptible to the various types of seismic hazards described in the previous sections of the text. Again, when Map 5 is used in conjunction with Map 4, it will allow a generalized determination of the types of hazards present, and their relative severity in relation to other portions of the County. The interpretive zones shown on Map 5 include:

- a. Active and potentially active faults
- b. Areas of tsunami hazard
- c. Areas underlain by recent alluvium
- d. Relatively unstable upland areas
- e. Terrace deposits
- f. Relatively stable areas

Each of these are discussed under sub-headings below.

(a) Active and potentially active faults. These are mapped as lines rather than zones. It should be recognized that areas immediately adjacent to the mapped fault lines may include secondary or branch faults, also, in many cases, fault location is difficult to define with precision. Therefore, the active and potentially active fault lines shown on the maps should be treated as zones of approximately an eighth of a mile on either side of the fault lines. This corresponds with the width of Special Studies Zones established pursuant to the Alquist-Priolo Act. As indicated on the explanation table on Map 5, the general hazard potentials along the active and potentially active faults include a high potential for ground rupture and a moderate to severe ground shaking potential near the fault. For planning purposes, it is suggested that potentially



active faults be treated the same as active faults and that geotechnical studies be performed in areas along these fault zones prior to actual development in the areas. Again for planning purposes, it is prudent to minimize the planning of urban development or critical facilities along or near the mapped fault lines. On the other hand, certain types of development could be done in these areas provided sufficient detailed subsurface investigations are conducted to determine, first, the location of the actual fault; secondly, its potential activity; and third, the nature of hazard mitigating measures needed.

(b) Areas underlain by recent alluvium. The hazard potential for these areas are moderate to high with respect to ground failures, whereas the hazard potential for ground shaking is considered high to severe. The effects of ground failure and the potential effects of ground shaking should be considered with respect to future land use. It is recognized that areas underlain by recent alluvium cannot always be avoided for future development. However, the alternatives should be carefully considered and the benefits and risks carefully weighed. In many cases additional investigation will be needed to identify and evaluate the hazards more specifically and to provide recommendations for mitigating those hazards for various types of proposed development of land use.

(c) Relatively unstable upland areas. This unit consists of Zones V and VI on the landslide and erosion susceptibility map (County Map 4). The general hazard potentials for this mapped unit include a moderate to high hazard with respect to landsliding and a



low to moderate hazard potential with respect to ground shaking. It should be noted, however, that the potential hazards with respect to landsliding, even though they are rated moderate to high for the category as a whole, can be locally severe, particularly in areas of existing or previously identified landslides. High density land usage and placement of critical facilities in areas of relatively unstable ground should be avoided. Again, detailed geotechnical studies may prove that individual areas within the mapped unit are sufficiently stable to support certain land uses.

(d) Terrace deposits. In this unit, the general hazard potential for ground failure is considered to be low in relation to the previously described units; however, there will be areas of high hazard potential locally situated within the unit, such as along the creek banks where ground failure can occur in the event of a moderate to major earthquake. The ground shaking hazard potential for the terrace deposits is considered moderate to high.

(e) Relatively stable areas. These include primarily the relatively stable upland areas and some minor zones of relatively stable ground in the low-lying hills adjacent to the alluvial valleys. These areas are considered to be the most stable areas within the County with respect to ground failure potentials. They are also considered to be areas which have only low to moderate ground shaking potential. Thus, for planning purposes, these areas would be considered the most desirable with respect to seismic hazards, even though they may prove to be less desirable because of topographic or geographic restraints.

Also shown on Map 5 are the areas excluded from the study such as the National Forest and military installations.



## 2. Geotechnical Evaluation Maps

For the urban and urbanizing portions of the Salinas Valley, additional detail is provided on maps "N" through "Q. A set of maps (at end of text) "N" through "Q: at 1:12,000 scale (1" = 1,000'), covers the Salinas Valley Cities - Gonzales, Soledad, Greenfield, King City - and their spheres of influence. These maps indicate six classes of zones ranging in prevalence of seismic hazards from Zone I (least) to Zone VI (most). Table I, following, applies to the 1:24,000 maps and the 1:12,000 maps of the Salinas Valley Cities. It is possible to zone and describe the seismic hazards within the areas covered by these maps through a single chart because of the similarity of physical conditions prevailing throughout this area.



TABLE 1  
MONTEREY COUNTY FAULTS

	C.D.M.G. <u>Report 13</u>	U.S. Geologi- cal Survey	This Report <u>Map 3</u>	
	Active _____	Poten- tially Active _____	Active _____	Poten- tially Active _____
San Andreas	X		X	X
Vergeles		Inactive		X
Gabilan Creek		Not Shown	Names-not shown	X
Los Lobos		X	X	X
Reliz-Riconada		X	X	X
Harper Canyon		Not Shown	Shown-not named	X
Berwick Canyon		X		X
Chupines & Corral de Tierra		X	X	X
Jolon		X	X	X
Navy		Not Shown	X	X
Ord Terrace		Not Shown	X	X
Cypress Pt. Seaside		Not Shown	X	X
Monterey Bay (zone)	X	X	X	X
Tularcitos		Inactive	X	X
Lower Carmel Valley		X	X	X
Palo Colorado & San Gregoria	X		X	
Sur-Nacimiento		Inactive	Inactive	X



TABLE 2

APPLIES TO: MAPS OF SALINAS VALLEY CITIES N - Q (1:12,000)

EVALUATION OF HAZARDS\*

ENGINEERING				SEISMIC							
	EXPANSIVE SOILS	EROSION	EXCAVATION	GROUND WATER	SLOPE STABILITY	LURCH CRACKING	LATERAL SPREADING	VIBRATION DAMAGE	SUBSIDENCE & UPLIFT	GROUND RUPTURE	LIQUEFACTION
I	△ TO □+	△ +	□ TO ○+	△ +	NA	NA	NA	△ +	NA	NA	NA
II	△ TO □+	△ TO ○+	□ +	□ +	△ TO □+	□ TO ○+	□ +	△ TO ○+	□ +	NA	□ TO ○+
III	△ TO □+	△ TO □+	△ +	△ +	□	□ +	△ +	□ +	△ TO □+	NA	□ TO ○+
IV	□ TO ○+	□ TO ○+	△ TO □+	△ TO ○+	○ TO □+	□ TO ○+	□ +	□ TO ○+	○ +	NA	□ TO ○+
V	△ +	△ TO ○+	□ +	□ +	△ TO ○+	△ TO ○+	△ TO □+	○ +	□ TO ○+	○ +	□ TO ○+
VI	○ +	○	□ +	○ +	○	○ +	○ +	○	□ TO ○+	○ +	□ TO ○+

△ MINOR      □ MODERATE      ○ MAJOR

NA GENERALLY NOT APPLICABLE

+ LOCALLY

- \* The triangles indicate that the potential geotechnical hazard is of concern in less than about 10% of the zone so designated. The squares indicate that the potential hazard is of concern in less than about 40% of that zone, whereas the circles indicate that the potential hazard is of concern in more than about 40% of that zone. A cross is used as a modifier to indicate that a particular geotechnical hazard is a localized one as well as being a potential problem throughout the zone. The symbols, then, are intended to indicate the potential for distribution within a zone rather than the severity of the hazard within that zone.



In using the information from the geotechnical maps, it must be kept in mind that the rating of hazards carried in the tables are general, indicating the range of conditions to be expected within the areas in each class of zone shown on the map. The ratings of the several hazards should be used with caution in relation to making judgements regarding the relative capability of lands to support any particular use, existing or prospective, in Monterey County. Although the maps should be helpful in preliminary evaluation of sites for specific facilities and uses, extreme caution is needed to avoid drawing erroneous conclusions because of the generality of the basic information.

The boundaries shown on the Geotechnical Evaluation maps are only approximate and the zonation or units shown are necessarily generalized on the basis of topographic, geologic, and soil data available for interpretation. The boundaries, then, are subject to modification and adjustment in the event of future detailed studies in those locations. The maps can be utilized for planning purposes to determine areas of relatively low geotechnical hazard potential in relation to areas of greater or high hazard potential. It is recognized that certain high hazard areas may be unavoidable in which case it is important to recognize the hazards and require sufficiently detailed geotechnical studies to properly identify the extent of the hazards and provide mitigating measures for the planned land usage or proposed development in such areas.

For planning purposes, it is suggested that the planners look first at areas presenting the least prospect of geotechnical



hazards in trying to determine the most favorable areas for future development.

In making recommendations for future geotechnical investigations, it is necessary to take into account the type of planned land usage and the geotechnical conditions effecting each site. Recommended procedures for determining the type and extent of future geotechnical investigations are included in Part II of this Element.



## PART II - SEISMIC SAFETY POLICY

### A. General Goal

Monterey County (along with other areas of the State) is situated within a seismically active region of the world, consequently the County and its cities will be subject to future earthquakes capable of producing great damage and possible disaster. This jurisdiction will therefore take all reasonable and proper steps to reduce loss of life, injuries, damage to property, and economic and social dislocations resulting from earthquakes.

### B. Objectives

The objectives in adopting this Element of the General Plan are:

1. To define the potential seismic hazards in various parts of the County so that this information may be used as a guide for risk reduction for new construction, and for structural hazard abatement where needed in existing development.
2. To provide a guide to planning for appropriate uses of land in relation to identified seismic hazards.
3. To ensure that facilities whose continuing functioning is essential to society, and facilities needed in the event of emergency will, to the fullest extent practicable, continue to function in the event of major earthquake.
4. To facilitate post-disaster relief and recover operations.
5. To increase public awareness of seismic hazards, and of the means available to avoid or mitigate the effects of these hazards.



### C. Acceptable Risk (In Relation to Structures and Occupancies)

This section: (a) defines the term "acceptable risk", (b) assigns various structures, occupancies, and land uses to risk classes, (c) defines what constitutes an "acceptable risk" from specified hazards for each risk class, and (d) defines high hazard areas.

#### Acceptable Risk

The low level of "acceptable risk" is used to describe the level of risk that the majority of citizens will accept without asking for governmental action to provide protection. (To illustrate this point: Consider a site which is subject to occasional flooding. If the chances are one in a thousand that the site will be flooded in any given year, local citizens will probably accept that risk, without asking for special protection. If the chances of flooding are one in ten, however, either governmental regulations would be enacted to keep people from building on the site -in order to protect life and property- or property owners would ask that government build protection devices to control the flood waters.)

#### Classification of Structures and Occupancies

Five classes of structures and occupancies are established for the purpose of risk rating. The first two classes include critical facilities and occupancies - those structures and occupancies which are especially important for the preservation of life, the protection of property, or for the continuing functioning of society. Less critical structures and occupancies



are included in Classes 3, 4, and 5.

Table 2, following, describes the kinds of facilities and occupancies in each class, and defines a level of "acceptable damage"

TABLE 3

LEVELS OF ACCEPTABLE RISK AND DAMAGE  
RELATED TO KIND OF FACILITY AND OCCUPANCY

RISK CLASS 1 - EXTREMELY LOW

Structures whose continued functioning is critical, or whose failure might be catastrophic: Nuclear reactors, large dams, power inertia systems, plants manufacturing or storing explosives or toxic materials.

Acceptable Damage\*: None which would expose large populations to death or serious injury or impair the facility or disrupt its function.

RISK CLASS 2 - VERY LOW

Structures whose use is critically needed after a disaster: Important utility centers; hospitals; fire, police, and emergency communication facilities; fire stations; and critical transportation elements such as bridges and overpasses; also smaller dams.

Acceptable Damage: Minor non-structural; facility should remain operational and safe, or be susceptible to quick restoration of service.

RISK CLASS 3 - LOW

Structures of high occupancy, or whose use after a disaster would be particularly convenient: Schools, churches, theaters, large hotels, and other high-rise buildings housing large numbers of people, other places normally attracting large concentrations of people, civic buildings such as fire stations, secondary utility structures, extremely large commercial enterprises, most roads, alternative or noncritical bridges and overpasses.

Acceptable Damage: No structural damage which would materially impair safety; structures should remain usable; some impairment of function acceptable.

\* Except where otherwise indicated "Acceptable Damage" relates to damage from the maximum credible earthquake, i.e., Richter magnitude 8.3 and epicenter within 50 miles. In most structures, it is expected that structural damage, even in a major earthquake, could be limited to repairable damage.



TABLE 3 - (continued)

RISK CLASS 4 - ORDINARY

The vast majority of structures: Most commercial and industrial buildings, small hotels, and apartment buildings, and single-family residences.

Acceptable Damage: The vast majority of structures consist of commercial and industrial buildings, small hotels and apartment buildings, and single-family residences, for which an "ordinary" degree of risk should be acceptable. The criterial envisioned by the Structural Engineers Association of California provide the best definition of the "ordinary" level of acceptable risk. These criteria require that buildings should be able to:

- a. Resist minor earthquakes without damage;
- b. Resist moderate earthquakes without structural damage, but with some nonstructural damage;
- c. Resist major earthquakes, of the intensity or severity of the strongest experienced in California, without collapse, but with some structural as well as non-structural damage.

RISK CLASS 5 - MODERATE TO HIGH

Open space lands, non-intensive uses.

Acceptable Damage: Not applicable.

For each class, except where otherwise indicated, damage relates to damage that could be expected from an earthquake of magnitude 8.3 on the Richter scale with epicenter within 50 miles. (This is similar in magnitude to the 1906 earthquake on the San Andreas fault.)

For the purpose of applying seismic safety policy, the following areas are defined as high hazard areas:

- zones 1/8 mile each side of active or potentially active faults.
- areas on Map 5 indicated as "Underlain by Recent Alluvium" and "Relatively Unstable Upland Areas".
- Geotechnical Evaluation Maps zones IV and VI of Maps "N" through "Q".



D. General Policies

1. Uses of land should be controlled to avoid exposure to risk in excess of the level generally acceptable to the community (defined as "Acceptable Risk" in Section C of this Part).

2. Critical facilities, such as major transportation links, communications and utility lines, and emergency shelter facilities, should be located, designed and operated in a manner which maximizes their ability to remain functional after a great earthquake.

3. In those instances where critical facilities are located in or across high hazard areas, all reasonable measures should be taken to insure continuity or quick restoration of service in the event of earthquake.

4. Standards for structural design and other building components should be formulated and applied to achieve safety consistent with acceptable levels of risk.

5. Existing structures and facilities should be evaluated to identify structural conditions which would present excessive risk in the event of a major earthquake. Priority should be given to critical facilities and high occupancy facilities as defined in Section C of this Part.

6. The public should be made aware of hazards and measures which can be taken to protect their lives and property.

7. Soils reports and geologic investigations are required in all instances in which available information indicates there is a substantial threat to life or property.



8. The location and extent of areas covered by soil and geologic investigations received by this jurisdiction shall be recorded and the reports thereon shall be considered to be public records. Where appropriate the results of such detailed investigations will be utilized to supplement and supersede more general information.

E. Policies Related to Seismic Hazards

a. All faults shown on Map 5 should be considered as active faults unless and until evidence to the contrary is developed through field investigations.

b. The lands within 1/8 mile of mapped faults should be treated as zones of potential fault movement.

c. Geotechnical investigations to improve the accuracy of mapping and further define the characteristics of the fault should be undertaken for all public facilities, real estate developments and structures for human occupancy proposed to be located in such zones.

d. Structures for human occupancy should be located appropriate distances from active or potential faults shown on Map 5. Regulations should specify how fault traces are to be located, what distances are appropriate from each type of fault trace, and the procedures for bringing about compliance with this policy.

e. New roads, bridges and utility lines (either public or private) that cross active or potentially active fault traces should be designed and constructed in a manner which recognizes the hazard of fault movement. Water, gas and electric lines should



be equipped with shut-off devices which utilize the best available technology for quick shut-off consistent with providing reliable service.

f. All existing utility lines that cross active or potentially active fault traces should be examined to determine their ability to survive fault movement in the amount likely to take place in the particular location. Utility companies should institute orderly programs of installing cut-off devices on these lines, starting with the lines that appear to be most vulnerable and those which serve the most people. Adequate emergency water supplies should be established and maintained in areas served by water lines which cross active fault traces.

2. Ground Shaking

a. Building codes should be reviewed at least annually and where necessary updated to incorporate "state-of-the-art" design criteria and standards related to seismic forces.

3. Ground Failure

a. Placement of critical facilities and high occupancy structures in areas highly subject to ground failure should be avoided where possible.

b. Any decision to locate any substantial structure in a location highly subject to ground failure should be based on careful consideration of alternatives and the probable costs and benefits as related to the risks. Adequate geotechnical investigations should be undertaken to provide necessary information.



## PART III - IMPLEMENTATION

### Land Use Planning Guidelines

Seismic and other geologic hazards should be given major consideration in land use planning. Although many factors in addition to seismic safety are involved in determining the appropriateness of use for any site or land area, the following guiding principles are adopted:

1. Critical facilities (risk classes 1, 2 and 3) and occupancies should not be located in areas classified as IV, V, or VI on the Geotechnical Evaluation Maps (scale 1:24,000 and 1:12,000) unless no other sites are feasible and only then when site specific seismic investigations are made and the structures involved are designed and constructed to withstand a great earthquake with damage limited to an acceptable level.

2. Other factors being equal, urban expansion should be directed to areas of lowest seismic hazard.

3. Renewal for intensive uses (as opposed to open space lands) should be restricted to areas of low seismic risk unless site specific investigations indicate that the particular structures can be designed and constructed to meet seismic safety criteria for the type of structure and occupancy proposed.

4. Land use decisions should be based on realistic evaluation of land capability giving appropriate weights to seismic conditions and other relevant physical characteristics.

5. Subdivision of land should not be permitted unless and until adequate mitigating measures where appropriate are



assured for such seismic hazards as are present in the particular location.

#### Guidelines to Land Use Regulation

Implementation of policies to reduce seismic risk should be addressed in zoning, subdivision, and site development regulations, and the building code. The following general guidelines apply to all of these regulations:

1. A means should be provided by which the data on which the policies in this element were derived can be updated or superseded as more accurate or more precise data becomes available.

2. In formulating regulations, particular care should be exercised to recognize the level of generality of the data on which this element is based. For specific applications, procedures should be incorporated requiring submittal of additional and more precise data by qualified professionals. The nature of data and interpretations required should be defined in relation to the matter being considered.

Zoning regulations should at a minimum include the following:

1. Definition of special study zones on Zoning Maps related to active and potentially active faults, where detailed information is available.

2. Procedures for defining more accurately the location of faults impacting a particular development.

3. Setback requirements for critical facilities and structures for human occupancy with one set of distances related



to "accurately located" fault traces and another set providing a greater factor of safety for fault traces not accurately located.

4. Setback lines along creek and river banks in areas of moderate to major lateral spreading hazard with provisions for exceptions when more detailed information demonstrates conclusively that standards of acceptable risk can be met on a particular site.

Subdivision regulations should include or require:

1. Procedure for evaluating overall suitability of any proposed subdivision in relation to identified seismic hazards.  
(Conformity of the proposed subdivision with Seismic Safety Element of the General Plan.)

2. Dedication of open space easements to identify the nature of any high seismic hazards impacting any lot and prohibit construction within appropriately defined areas.

3. Routine investigation of geotechnical problems should be required for all Tentative Subdivision Maps. Where problems of a serious nature are identified in routine investigations, detailed investigations should be required at a stage in the subdivision approval process appropriate to the degree of impact on the feasibility of the subdivision or its layout.

Site Development regulations should require:

1. Site specific information should be required adequate for decisions regarding grading and other site development. Depending on the nature and seriousness of seismic hazards impacting the particular site investigations would be either "Routine" or "Detailed".



2. Where no separate site development regulations are in force, the jurisdiction should at a minimum, adopt Chapter 70 of the 1973 Edition of the Uniform Building Code or most recent edition.

Building Code

At a minimum, the Earthquake Regulations of Chapter 23 of the 1973 Edition of the Uniform Building Code should be adopted as part of the local building regulations.

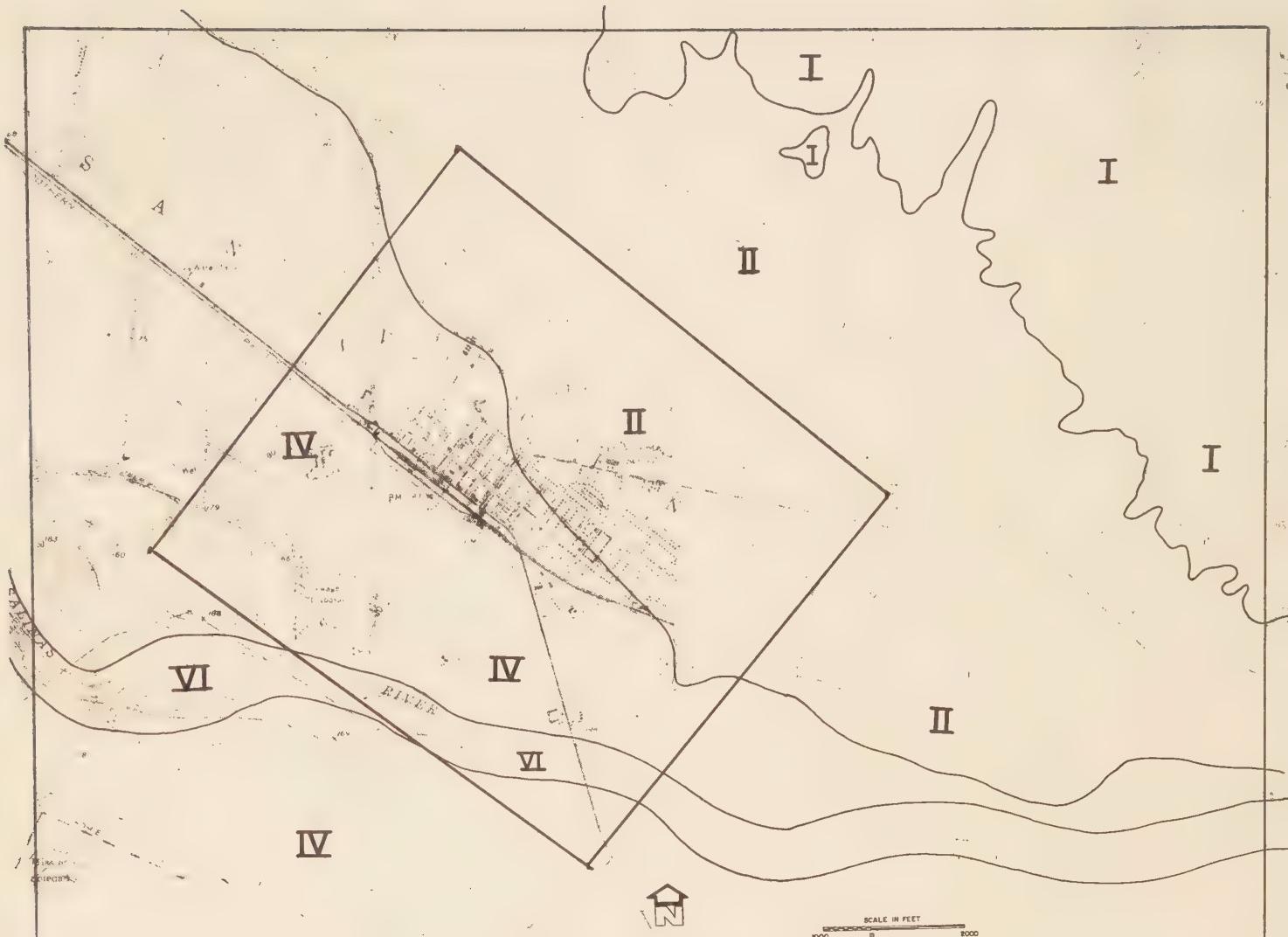
In addition, consideration should be given to adoption of special parapet regulations requiring the removal or strengthening of parapets, cornices and other overhanging features which do not meet standards and requirements for seismic safety.



TABLE 4LOCATION OF CRITICAL FACILITIES & OCCUPANCIES  
BY HAZARD ZONE FOR SOLEDAD

	Hazard Zone			Level of Acceptable Risk
	II	IV	VI	
Waste Water Treatment				
Plants		X		2
Trunk sewers	X	X		2
Power Plants (None)				
Substations -				
electric		X		2
Transmission lines -				
gas		X	X	2
Transmission lines -				
electric	X	X	X	2
Emergency Services				
Police		X		2
Fire		X		2
Schools				
San Vicente School	X			3
Building Areas of Anticipated Poor Response				
Area along Southern Pacific Railroad lines		X		NA
Transportation				
Overpasses:				
Rte. 101 & S.P.R.R.		X		2
Rte. 101 bypass				
interchange		X		2
Bridge:				
Rte. 101 crossing				
of Salinas River			X	2
Existing Development	X	X		4
Future Development	X	X		4





#### EVALUATION OF HAZARDS\*

##### ENGINEERING

##### SEISMIC

EXPANSIVE SOILS      EROSION      EXCAVATION      GROUND WATER      SLOPE STABILITY      LURCH CRACKING      LATERAL SPREADING      VIBRATION SUBSIDENCE & UPLIFT      GROUND RUPTURE      LIQUEFACTION

	I	△ TO □	△* TO ○*	□ TO ○*	△* TO ○*	NA	NA	NA	△* TO ○*	NA	NA	NA
I	△ TO ○*	△ TO ○*	□ TO ○*	□ TO ○*	△ TO ○*	□ TO ○*	□ TO ○*	□ TO ○*	△ TO ○*	□ TO ○*	NA	□ TO ○*
II	△ TO ○*	△ TO ○*	□ TO ○*	□ TO ○*	△ TO ○*	□ TO ○*	□ TO ○*	□ TO ○*	△ TO ○*	□ TO ○*	NA	□ TO ○*
III	△ TO ○*	△ TO ○*	△* TO ○*	△* TO ○*	□ TO ○*	□ TO ○*	□ TO ○*	□ TO ○*	□ TO ○*	△ TO ○*	□ TO ○*	□ TO ○*
IV	□ TO ○*	□ TO ○*	△ TO ○*	△ TO ○*	○ TO ○*	□ TO ○*	□ TO ○*	□ TO ○*	□ TO ○*	○ TO ○*	NA	□ TO ○*
V	△* TO ○*	△ TO ○*	□ TO ○*	□ TO ○*	△ TO ○*	△ TO ○*	△ TO ○*	○ TO ○*	□ TO ○*	○ TO ○*	□ TO ○*	□ TO ○*
VI	○ +	○ +	□ +	○ +	○ +	○ +	○ +	○ +	○ +	○ +	○ +	○ +

△ MINOR      □ MODERATE      ○ MAJOR

NA GENERALLY NOT APPLICABLE

+ LOCALLY

NOTE: THIS MAP IS INTENDED FOR PLANNING PURPOSES ONLY

\* The triangles indicate that the potential geotechnical hazard is of concern in less than about 10% of the zone so designated. The squares indicate that the potential hazard is in concert in less than about 40% of the zone, whereas the circles indicate that the potential hazard is of concern in more than about 40% of the zone. A cross indicates that the potential hazard is a localized one as well as being a potential geotechnical hazard is a localized one as well as being a potential geotechnical hazard throughout the zone. The symbols, then, are intended to indicate the potential hazard distribution within a zone rather than the severity of the hazard within that zone.

#### GEOTECHNICAL EVALUATION

SOLEDAD  
MONTEREY CO., CALIFORNIA

A JOINT VENTURE OF

WM SPANGLE & ASSOCIATE

BURKLAND & ASSOCIATES RICHARD R. THORUP

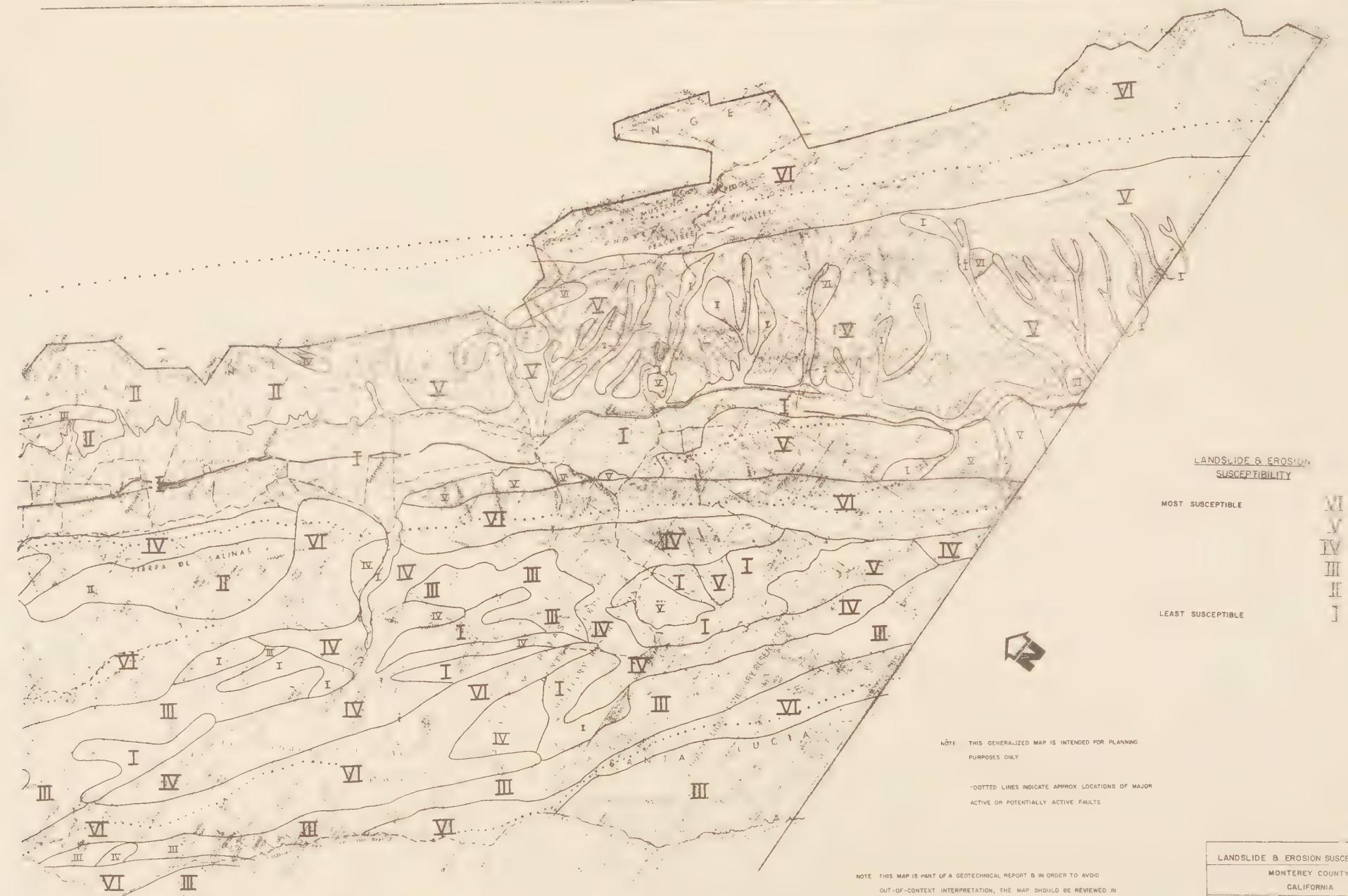
PREPARED BY:

BURKLAND & ASSOCIATES  
CONSULTANTS IN ENGINEERING GEOLOGY  
MOUNTAIN VIEW-SACRAMENTO-SAN DIEGO

JULY 1974 FILE NO: K3-0113-MI

DWN: JFDS, RGB MAP O

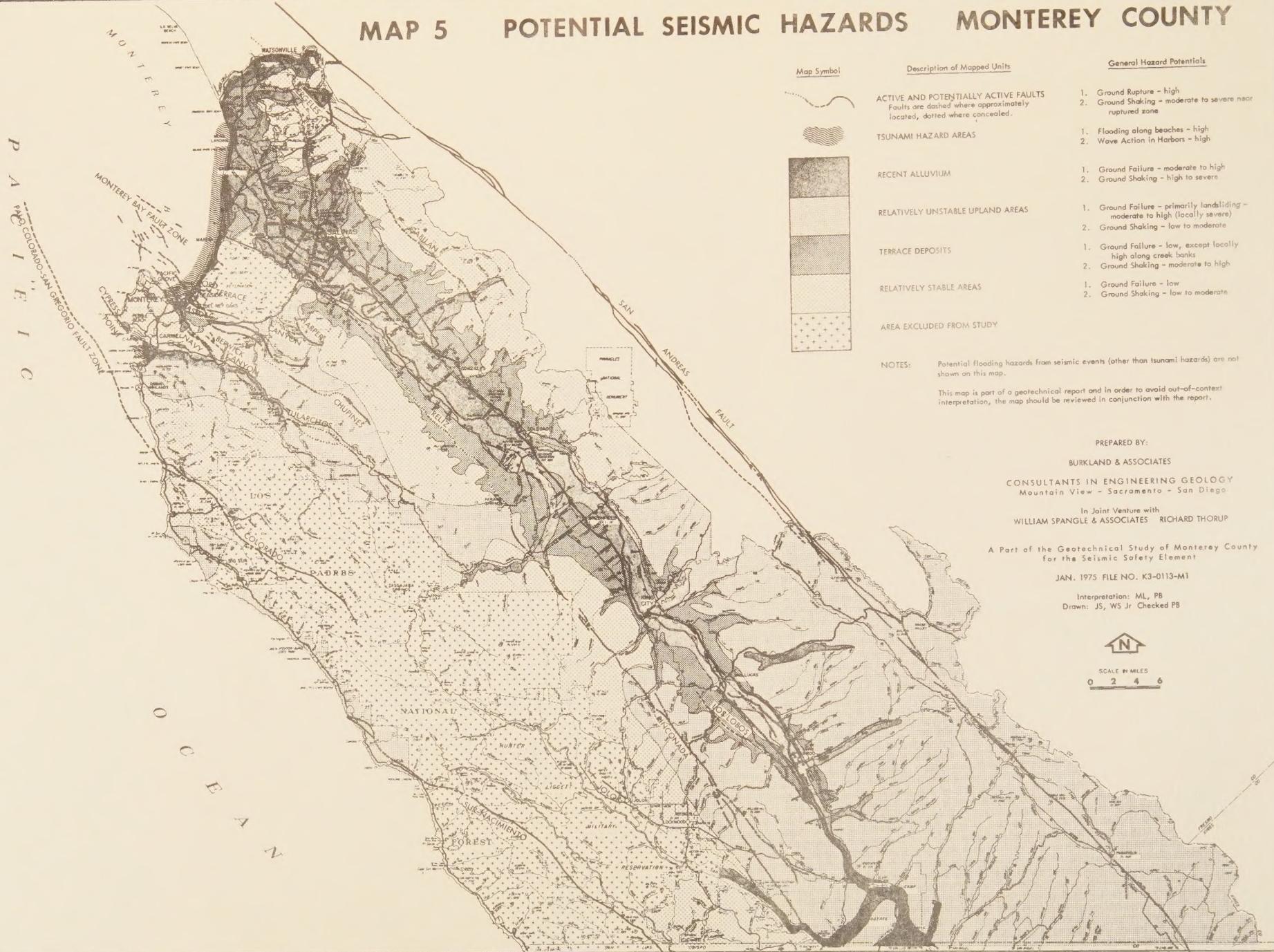




LANDSLIDE & EROSION SUSCEPTIBILITY	
MONTEREY COUNTY	
CALIFORNIA	
A JOINT VENTURE OF	
WM SPANOLI & ASSOCIATES	RICHARD R THORUP
BURKLAND & ASSOCIATES	
CONSULTANTS IN ENGINEERING GEOLOGY	
MOUNTAIN VIEW - SACRAMENTO - SAN DIEGO	
JULY 1974	FILE NO. K4-DIG-NB
DRAWN JPDG	CDK:ML COUNTY MAP 4



# MAP 5 POTENTIAL SEISMIC HAZARDS MONTEREY COUNTY





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